

85- DISTRIBUTION OF HYMENOPTEROUS PARASITOIDS OF *Anastrepha* spp. IN GUAVA (PSIDIUM GUAJAVA) ALONG AN ALTITUDINAL TRANSECT IN THE SOCONUSCO REGION (CHIAPAS, MEXICO): PRACTICAL IMPLICATIONS FOR A POTENTIAL AUGMENTATIVE BIOCONTROL PROGRAM WITH NATIVE PARASITOIDS

Authors: Lía Ruiz¹, Jorge Cancino¹, Enoc Gómez¹, John Sivinski² and Martín Aluja³

¹Campaña Nacional Contra Moscas de la Fruta (Dept. de Desarrollo de Métodos), Apartado Postal 363, 30700 Tapachula, Chiapas, México, E-mail:jcanci@prodigy.net.mx.

²Center for Medical, Agricultural & Veterinary Entomology, USDA-ARS, 1600/1700 SW 23rd Drive, Gainesville, Florida 32608, USA.

³Instituto de Ecología A.C., Apartado Postal 63, 91070 Xalapa, Veracruz, México

Using guava (*Psidium guajava*) as a fly source, we determined the presence of *Anastrepha* spp. larval-pupal parasitoids along an altitudinal transect in the Soconusco Region of the State of Chiapas, Mexico. A total of 15 sites, ranging in altitude from 10 to 1800 meters above sea level were selected and fruit sampled on a monthly basis during two consecutive years (1998-1999). Out of 7,144 fruit sampled (343 Kg), we collected 16,999 larvae (2.49 ± 0.42 S.E. larvae per fruit) from which 634 (5.17 %) adult parasitoids emerged. A total of 6 species were identified in the following order of abundance: *Diachasmimorpha longicaudata* (D.l., 44.79%)(Braconidae), *Aganaspis pellenroi* (A.p., 26.65%)(Eucoilidae), *Doryctobracon crawfordi* (D.c., 20.66%) (Braconidae), *Odontosoma anastrephae* (O.a., 3.62%) (Eucoilidae), *Aceratoneuromyia indica* (A.i., 2.99%) (Eulophidae), and *D. tryoni* (D.t., 1.26%) (Braconidae). Fruit samples also yielded (94.83%) *Anastrepha* adults of the following species (numbers in parenthesis represent proportion in sample): *A. striata* (A.s., 91.58%), *A. obliqua* (A.o., 3.92%), *A. fraterculus* (A.f., 3.67%), A. sp. (0.5%) and *Ceratitis capitata* (C.c., 0.2%). Parasitoid/fly distribution along the altitudinal transect was as follows (values represent proportions for each altitudinal range [parasitoids and flies considered separately]):

Altitude	Proportion of parasitoid and fly species										
	D.l.	A.p.	D.c.	A.i.	O.a.	D.t.	A.s.	A.o.	A.f.	A.sp.	C.c.
0-500	100	-	-	-	-	-	96.13	3.86	-	-	-
500-1000	22.61	62.81	4.52	-	10.05	-	89.45	6.55	3.95	0.03	-
1000-1800	53.22	10.50	29.11	4.53	0.71	1.90	90.88	2.70	4.91	1.07	0.41

Our results confirm those recently obtained by Sivinski et al. (2000) in Central Veracruz, Mexico showing a clear preference for particular environmental conditions by certain native parasitoid species. For example, *D. crawfordi* clearly prefers cooler temperatures and is thus preferentially found at altitudes ranging from 800 to 1800 meters above sea level. The latter supports our idea of maintaining a stock of several parasitoid species that can then be augmentatively released considering the environmental preference of each one. Through this approach, it will perhaps be possible to increase the efficiency of fruit fly biocontrol programs and to incorporate native species to the list of viable candidates for augmentative releases.

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References:

Sivinski, J., Piñero, J. & Aluja, M. 2000. The distributions of parasitoids (Hymenoptera) of *Anastrepha* fruit flies (Diptera: Tephritidae) along an altitudinal gradient in Veracruz, Mexico. Biological Control 18: 258-269.

DISTRIBUCIÓN DE PARASITOIDES (HYMENOPTERA) DE *Anastrepha* spp. EN GUAYABA (PSIDIUM GUAJAVA) A LO LARGO DE UN TRANSECTO ALTITUDINAL EN EL SOCONUSCO, CHIAPAS, MÉXICO: IMPLICACIONES PRÁCTICAS PARA UN PROGRAMA POTENCIAL DE LIBERACIONES INUNDATIVAS CON PARASITOIDES NATIVOS

Se determinó la presencia de parasitoides de larva-pupa de *Anastrepha* en guayaba (*Psidium guajava*) a lo largo de un transecto altitudinal en la Región del Soconusco en el estado de Chiapas, México. Un total